

We claim:

1. A method for synchronizing a route change in a routing table with a plurality of multicast routing protocols in a network device in a communication network device, the  
5 method comprising:  
    assigning a route ID value to each route in the routing table;  
    assigning a bookmark in a route change queue to each multicast routing protocol, the bookmark having a value equivalent to the route ID value of the last route processed by the multicast routing protocol;  
10      assigning a new route ID value to each route changed in the routing table;  
    storing each route changed in the route change queue; and  
    comparing the bookmark value of each multicast routing protocol to the highest route ID value in the route change queue.
- 15 2. A method according to claim 1, wherein the route change is the addition of a new route to the routing table.
3. A method according to claim 1, wherein the route change is the deletion of a route from the routing table.
- 20 4. A method according to claim 1, wherein the route change is updating a route in the routing table.
5. A method according to claim 1, further including processing routes in the route  
25 change queue with route ID values greater than the bookmark value of the multicast routing protocol.
6. A route entry for a route in a routing table for a plurality of multicast routing protocols, the route entry comprising:  
30      an address for the route source network;

an address for the next hop of the route;  
an address for the next hop interface of the route;  
a route state value for indicating the current state of the route;  
a routing protocol identifier for identifying the routing protocol associated with the

route; and

a route ID value for determining when the route entry has been processed by each of the plurality of routing protocols.

7. A computer program product for use on a computer system for synchronizing a route change in a routing table with a plurality of multicast routing protocols in a network device in a communication network, the computer program product comprising a computer useable medium having computer readable program code thereon, the computer readable program code including:

program code for assigning a route ID value to each route in the routing table;

program code for assigning a bookmark in a route change queue to each multicast routing protocol, the bookmark having a value equivalent to the route ID value of the last route processed by the multicast routing protocol;

program code for assigning a new route ID value to each route changed in the routing table;

program code for storing each route changed in the route change queue; and

program code for comparing the bookmark value of each multicast routing protocol to the highest route ID value in the route change queue.

8. A computer program product according to claim 7, wherein the route change is the addition of a new route to the routing table.

9. A computer program product according to claim 7, wherein the route change is the deletion of a route from the routing table.

10. A computer program product according to claim 7, wherein the route change is updating a route in the routing table.

